

# Receiving Report

Date:

14-11-12

Batch No:

130862

Supplier:

CORE

Dart P/O:

26452

Packing Slip: Yes ☒ No ☐  
 Invoice: Yes ☒ No ☐  
 Receipt: Cash ☐ Cr ☒  
 New Supplier: Yes ☐ No ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐  
 Waybill Attached: Yes ☐ No ☒  
 Shipment Complete: Yes ☐ No ☒ N/A ☐  
 QC18 Inspection: ☐ N/A ☒  
 Work Order: ☐ N/A ☒

## Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver

QC12

[Signature]

Production/Admin:

Date

Received/Costing

Initial

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Location

\_\_\_\_\_



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO26452**

Purchase Order Date 11/10/2014

PO Print Date 11/10/2014

Page Number 1 of 2

**Order From :**

VU-COR001

C.O.R.E. AVIATION SERVICES  
16305 E. TWIN ACRES DRIVE  
GILBERT, AZ 85297  
US

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**PAID**

Contact Name  
Vendor Phone 480 497 6136  
  
Ship To Contact  
Ship To Phone  
Ship Via: FedEx Overnight collect  
Ship Acct:

Buyer  
Customer POID  
Customer Tax # 10127-2607  
Terms Net 10  
Currency USD  
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extend Pri
1	AN4C47A	Bolt	11/11/2014 Yes 11/11/2014		50.00 ✓ Each	\$15.00	\$750.
						<b>Line Total:</b>	\$750.
2	AN4C42A	Bolt	11/11/2014 Yes 11/11/2014	FN	12.00 ✓ Each	\$35.00	\$420.
						<b>Line Total:</b>	\$420.
3	MS20426AD10-9A	RIVET	11/11/2014 Yes 11/11/2014		100.00 ✓ Each	\$10.00	\$1,000.

8014-11-12.

PO Instructions: Fedex Acc#151793240

Note:

11/10/2014

**BUTLER, INC.**

1600 W. 166th STREET  
GARDENA, CA 90247

## PACKING LIST

Customer No. C.O.R.E

Bill To: **CORE AVIATION SERVICES, INC.**  
16305 E. TWIN ACRES DR.  
GILBERT, AZ 85298

Ship To: **CORE AVIATION SERVICES, INC.**  
16305 E. TWIN ACRES DR  
GILBERT, AZ 85298

Date	Ship Via	F.O.B.	Terms	
11/13/12	UPS	Origin		
Purchase Order Number	Order Date	Sales Person	Our Order Number	
STK120605	06/05/12		15544	
Quantity	Item Number	Description	Unit Price	Amount
Required	Shipped	B.O.		
1000	500	500 AN4C47A		LOT 15544

**BUTLER INC.**

1600 West 166th Street Gardena, CA 90247  
(310) 323-3114 FAX (310) 324-0914



PERRY JOHNSON  
REGISTRARS, INC.

ISO 9001 REGISTERED

# BUTLER INC.

1600 W. 166th STREET  
GARDENA, CALIFORNIA 90247  
(310) 323-3114 / FAX (310) 324-0914



PERRY JOHNSON  
REGISTRARS, INC.

ISO 9001 REGISTERED

CAGE # 59053

C.O.R.E. AVIATION SERVICES  
16305 E. TWIN ACRES DRIVE  
GILBERT, AZ 85298

## CERTIFICATE OF COMPLIANCE

BUYER ORDER NO.: STK120605      ITEM: 1

NSN #: NA      PART NUMBER: AN4C47A      REV: 2

DESCRIPTION: BOLT, HEX HEAD, .2500-28 x 4.906, 431, PASSIVATE

SPECIFICATIONS: NASM6812-3, ASTM A 493-09, AMS-H-6875B, AMS2700E

QUANTITY: 500      LOT #: 15544      HEAT #: G18835

BUTLER INC. HEREBY CERTIFIES THAT THIS LOT HAS BEEN PRODUCED, SAMPLED, INSPECTED, TESTED, MARKED AND PACKAGED IN ACCORDANCE WITH ALL CONTRACT, DRAWING AND SPECIFICATION REQUIREMENTS. FURTHERMORE, BUTLER INC. CERTIFIES THAT DOCUMENTED EVIDENCE OF COMPLIANCE WITH ALL CONTRACT, DRAWING AND SPECIFICATION REQUIREMENTS APPLICABLE TO THIS LOT IS ON FILE AT OUR PLANT IN THE FORM OF MECHANICAL, METALLURGICAL AND/OR CHEMICAL TEST REPORTS AND INSPECTION RECORDS, AND IS AVAILABLE FOR BUYERS REVIEW.

DATE OF EXECUTION: 11/14/12

SIGNATURE: Tod F. Polidori

TOD F. POLIDORI

TITLE: Q.A. MANAGER

Form #BIC015  
Rev 11/97

Order No: 3432235  
Time 10:13:08



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

B04163  
Cust. NO.: 22883  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

BUTLER INC \*\*\*  
1600 W 166TH ST  
\*\* MAIL OUT INVOICES \*\*  
GARDENA CA 90247-4704

ROOKE MFG  
3360 W HARVARD ST  
SANTA ANA CA 92704-3920

06/28/12

QTY	--DESCRIPTION--	--ITEM CODE--	--HEAT NUMBER--
	CG 431 ANN AMS 5628 GREEN/YELLOW		
26	BARS .510"RD 12'RL	4290	G18870
	ONE HEAT LOT		
100	BARS 1/4"RD 12'RL	4200	G18835
	ONE HEAT LOT USE HT# G18835		
59	BARS .265"RD 12'RL	4210	G18835
	ONE HT LOT		

REVIEWED BY: JB

DATE: 7-6-12

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION (I.E. MAG., SONIC, ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

**NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT**

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

MAT'L USED  
FOR LOT #

15544

Chip Sandoval  
CHIP SANDOVAL - Q.C. MANAGER



# Dunkirk Specialty Steel, LLC

A Universal Stainless Company

P.O. Box 319

830 Brigham Rd.

Dunkirk, NY 14048

Quality System Registered to  
ISO9001 and AS9100

## Material Certification

ILL ORDER: 0042386  
ART NUMBER: S#4200  
O. NUMBER: 46809-25

P.O. DATE: 11/22/2011

PAGE NUMBER: 1 of 1

PRINTED: 4/20/12 07:26

S FRY STEEL COMPANY  
O T P.O. BOX 4048  
L O  
D

SANTA FE SPRINGS, CA 90670

S FRY STEEL CO  
H T C/O C.M.I. FREIGHT TRANS  
I O 4201 WEST 36TH ST  
P

CHICAGO, IL 60623

Material Description: STAINLESS STEEL ROUND BAR 431 EAF+AOD ANNEALED CENTERLESS GROUND AMS 2303F, ASTM A484-10, 41L-S-18732D, AMS-S-18732B, AMS 5628F, McDonnell Douglas DMS-1565G (except sonic), Hi Shear #115J (Type II, chemistry only), Federal QQ-S-763C Am. 2 (431 cond. A, exc. hard. & impact), waive CLM, ASTM A276-10 (431).

Size: .2500 DIAM X 132.0000 MIN/

156.0000 MAX RANDOM LENGTH

Heat Number:	C	MN	SI	S	P
G18835	0.15	0.60	0.35	0.004	0.020
FNL	CR 16.12	W <0.05	V 0.03	NI 2.19	MO 0.06
WA	CO <0.05	CU 0.15	SN 0.010	PB	CE 0.02
	TA	AL <0.01	TI <0.01	FE	B
	O	MG	CA	SE	ZR
	AG	BI	N 0.048	H	CQ

HARDNESS (AS SHIPPED): 247 BHN

TENSILE CAPABILITY: 1675F/1HR/OQ+1175F/3HR/AC

T/S KSI	Y/S KSI	REL
152.4	114.7	18.9

TENSILE CAPABILITY: 1875F/1HR/OQ + -100F/2HR/AC+550F/2HR/AC + 550F/2HR/AC

T/S KSI	Y/S KSI	REL	RA/A
214.9	158.4	16.0	59.0

HARDENABILITY: Rc 49.0

MICRO TEST: ACCEPTABLE

MACRO ETCH TEST: ACCEPTABLE

GRAIN SIZE: 8

FERRITE: <4%

MAGNETIC PARTICLE F/S = 0/0

KNOWINGLY RECORDING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

S# 4200

MELT SOURCE: UNIVERSAL/DUNKIRK

CHEMICAL BALANCE IS F#

MATERIAL MELTED IN THE USA BY UNIVERSAL STAINLESS & ALLOY PRODUCTS, BRIDGEVILLE, PA

MATERIAL MANUFACTURED IN THE USA

MAY 03 2012

BY Chip Sandoval  
CHIP SANDOVAL - Q.C. MANAGER

MAT'L USED  
FOR LOT # 15544

/S/John M. Berry

/S/John M. Berry

04/20/12

Prepared by: John M. Berry, QA

John M. Berry, QA Technician

Date

Melted and manufactured in compliance with DFARS 252.225-7014 ALT 1. Melted by USAF in Bridgeville, PA, USA. Certification IAW DIN 50 049 / EN 10204 3.1. Material complies with EU directive 2002/95/EC (RoHS). The test results shown are certified to be a correct statement of records that were derived from testing samples of the material. Results meet applicable specifications. No welding was performed on the material supplied on this order. Material is free from mercury contamination. Material is of NAFTA origin. This material was produced under the Dunkirk Specialty Steel Quality Management System documented in QP Manual, Rev. 6 dated 1/6/2012, conforming to NCA-3800. Material testing was performed as applicable in accordance with ASTM A370, A604, E8, E10, E18, E23, E45, E112, E139, E381, E572, E1019, STP-CHEM-GDS, E1444, & AMS 2315. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal



10643 S. NORWALK BL.  
SANTA FE SPRINGS  
CALIFORNIA 90670  
562-944-8808  
800-622-6624  
FAX 562-944-1499  
www.continentalht.com

# CERTIFICATION

CERTIFICATION NUMBER  
616534

<b>BUTLER INC</b> S O L D 1600 W 166TH STREET GARDENA, CA 90247-4704		<b>BUTLER INC</b> S H I P T O 1600 W 166TH STREET GARDENA, CA 90247-4704	
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CUSTOMER NUMBER 0047500	DATE RECEIVED 09/26/12	CUSTOMER P.O. NUMBER 23925	CUSTOMER SHIPPER
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QUANTITY 1319	WEIGHT 98	PART NUMBER / DESCRIPTION AN4C47A REV. 2 LDT# 15544 HEAT# G18835 END USER: C.O.R.E. H/T, 125-145 KSI PER P.O.		2 PANS
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MATERIAL 431 S/S	HARDNESS 26-32 HRC	MAX-CROSS SECTION .250	CASE DEPTH	CORE HARDNESS
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SPECIFICATIONS AMS 2759/5 B AMS H-6875 B

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	Q-MED & TEMP	DATE
RACK VERT			RACK		.50	Y				10/05
PRECLEAN	140	:05	WASH	140	18:40	18:40	18:45	AIR	A/C	10/05
LOADCOUPLE			WIRE		.08	Y				10/08
SET V P			ATMOS		.02	Y				10/08
AUSTENITIE	1875	:45	V1	1875	20:49	00:00	00:45	VAC	OIL	10/08
SUBZERO	-100	2:00	CB3	-100	02:55	03:10	05:10	NIT	A/W	10/09
TEMPER 15	1125	3:00	D12	1125	12:35	13:30	16:30	AIR	A/C	10/09
TEMPER 15	1125	3:00	D12	1125	00:25	01:20	04:20	AIR	A/C	10/10
GLASS BEAD			B6		1.00	Y				10/11

HARDNESS VALUES, AS REPORTED, ARE CONVERTED VALUES FROM READINGS  
TAKEN ON THE HRA SCALE USING ASTM E 140

REVIEWED BY: JB

DATE: 10-16-12

HARDNESS: 28-30 HRC QTY TESTED: 15 QTY ACCT: 1319 QTY REJT: 0

INSPECTOR  
WALTER WILLIAMS JR.

DATE  
10/12/12

QUALITY MANAGER  
JIMMY MARTINEZ for DON LOWMAN

This Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are implied, as a result of the thermal processing and/or hardness testing cited on this Process Certification. Material processed in a mercury-, radium- and asbestos-free environment. Unless otherwise specified above, for all AMS material specifications, no qualification or periodic testing has been performed. ALL FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATEST REVISION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.



Element Materials Technology  
15062 Bolsa Chica  
Huntington Beach, CA  
92649-1023 USA

P 714 892 1961  
F 714 892 8159  
T 888 786 7555  
info.hb@element.com  
element.com

Contact: Tod Polidori  
Butler, Inc.  
1600 West 166th Street  
GARDENA, CA 90247

### TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 11/9/2012  
Purchase Order Number: 24122  
Work Order Number: BUT004-11-07-02032-1

Part No.:	AN4C47A REV. 2
Lot No.:	15544
Heat No.:	G18835
Material:	431
Specification:	NASM6812-3

### FASTENER EVALUATION — STAINLESS STEEL

Number of Pieces: 5  
Etchant:  
    Micro: Vilella's  
        Temperature: Ambient  
        Magnification: 100X/200X  
    Macro: Vilella's  
        Temperature: Ambient  
        Magnification: 20X  
Grain Flow:  
    Head: Grain flow follows the contour of the head. (Acceptable)  
    Head to Shank Fillet: Grain flow follows the contour of the head to shank fillet. (Acceptable)  
    Threads: Grain flow follows the contour of the threads. (Acceptable)  
Cracks: The entire sample shows no evidence of cracks.  
Discontinuities / Defects:  
    Head: No discontinuities / defects found.  
    Threads:  
        Crest Laps: 0.003" (Within limits)  
        Flank Laps: No discontinuities / defects found.  
        Root Laps: No discontinuities / defects found.  
Grain Growth: None  
Grain Size: ASTM 7.0  
Surface Condition on Head: No surface contamination (IGA) found.  
Surface Condition on Threads: No surface contamination (IGA) found.  
Microstructure: Exhibits fine tempered martensite with no visible carbide precipitation in the grain boundaries.  
Surface Hardening: None except as created in cold working rolling of threads.

### MATERIAL CONFORMS TO SPECIFICATION

This document contains technical data whose export and re-export/retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval may be required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

REVIEWED BY: 

Respectfully submitted

DATE: 11-9-12

15062 Bolsa Chica, Huntington Beach, CA 92649  
(714) 892-1961 ph • (714) 892-8159 fax www.element.com

  
Kelly Nguyen  
Senior Quality Administrator

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punishable as a felony under federal law. All testing was performed in a mercury free environment. All testing performed in accordance with the latest edition of the applicable ASTM, or other Federal Test Method in effect at the time of test.



Nadcap

# HADD-CO INSPECTION LAB

2420 Amstel Street, Torrance, CA 90505

Toll Free (888) 339-8472 Phone: (310) 325-7620 Fax: (310) 325-9665

www.haddco.com Email: NDT@haddco.com

NO. 14527

Sold To

BUTLER, INC  
1600 W 166TH ST  
GARDENA, CA 90249

P.O. Number

24072

Job/Lot #

15544

Completion Date

11/6/12

## CERTIFICATION

QUANTITY	PART NUMBER	DESCRIPTION
32	AN4C47A REV. 2	MPI PER ASTM-E-1444M-11 NASM 6812-3 MATL. 431 NOT PLATED HEAT# G18835

NO REJECTS

REVIEWED BY:



DATE:

11-9-12

This is to certify that 100% of the parts under subject purchase order have been inspected by Magnetic Particle Inspection in accordance with all applicable and/or purchase order requirements.

Inspector:

*H. L. Jones*

LANES LEVEL II



NOTE: Altering of this certification renders it void.

# Allblack Company, LLC

13090 Park St.  
Santa Fe Springs, CA 90670  
Phone: (562) 946-2955  
Fax: (562) 946-6665

## Certificate of Conformance

To: Butler Inc.  
1600 West 166th Street  
Gardena, CA 90247  
United States

From: Allblack Company, LLC  
13090 Park St.  
Santa Fe Springs, CA 90670

Packing List No: 325755  
Shipping Date: 11/09/12


Today's Date: 11/09/12  
PO Number: 24081

### MERCURY FREE PROCESS

Quantity	Shipped	Unit	Description	Job Number
1	LOT		PASSIVATE PER AMS 2700E 1239PCS. OF P/N AN4C47A REV 2 LOT#15544 HT#G18835 MATL:431, 2PNS. 88#	440610
1	EA		FUEL FEE	440611

GENTLEMEN: This is to certify that the following articles have been processed and/or inspected as indicated above in accordance with military standards and specifications. If testing is not noted then no testing was performed. If a specification is not called out on the purchase order, then the process was performed per best commercial practice.

REVIEWED BY:   
DATE: 11-13-12

  
Inspector's Initials  
Allblack Company, LLC



**PERRY JOHNSON  
REGISTRARS, INC.**  
ISO 9001 REGISTERED

# BUTLER INC.

1600 W. 166th STREET  
GARDENA, CALIFORNIA 90247  
(310) 323-3114 / FAX (310) 324-0914



**PERRY JOHNSON  
REGISTRARS, INC.**  
ISO 9001 REGISTERED

## CERTIFIED TEST REPORT

CAGE CODE: 59053

PART NO: AN4C47A REV: 2  
LOT NO: 15544  
HEAT NO: G18835  
MAT'L: 431

PROCUREMENT SPEC: NASM6812 REV: 3  
LOT SIZE: 1237  
TEST DATE: 11/13/12  
CERTIFICATION NO: 4612

Test type: **Rockwell hardness**  
Results:

Test value: N/A

Test method:

Butler procedure no:

1.	5.	9.	13.	17.	21.	25.	29.
2.	6.	10.	14.	18.	22.	26.	30.
3.	7.	11.	15.	19.	23.	27.	31.
4.	8.	12.	16.	20.	24.	28.	32.

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Test type: **Axial tensile**  
Results:

Test value: 4080 lbs min

Test method: NASM1312-8

Butler procedure no: BIQOP-5-8-4

1. 6237 lbs	5. 6299 lbs	9.	13.	17.	21.	25.	29.
2. 6339 lbs	6.	10.	14.	18.	22.	26.	30.
3. 6394 lbs	7.	11.	15.	19.	23.	27.	31.
4. 6265 lbs	8.	12.	16.	20.	24.	28.	32.

Technician: P. Ron  
Flavio Ron

Stamp:

Test type: **Double shear**  
Results:

Test value: 7360 lbs min

Test method: NASM1312-13

Butler procedure no: BIQOP-5-8-5

1. 8849 lbs	5. 8885 lbs	9.	13.	17.	21.	25.	29.
2. 8947 lbs	6.	10.	14.	18.	22.	26.	30.
3. 9024 lbs	7.	11.	15.	19.	23.	27.	31.
4. 8944 lbs	8.	12.	16.	20.	24.	28.	32.

Technician: P. Ron  
Flavio Ron

Stamp:

Test type: **Recess torque**  
Deformation allowable:  
Results:

Test value: N/A  
Installation:

Test method:  
Removal:

Butler procedure no:  
Sample size:

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Test type: **Magnetic permeability**  
Results:

Test value: N/A  
Sample size:

Test method:

Butler procedure no:

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Material, as tested, conforms to specification requirements. The information on this report represents only the material tested. This report shall not be reproduced except in full without the written approval of Butler Inc.

# Accurate Anodizing Inc.

P.O. Box 5207  
1801 W. El Segundo Blvd  
Compton, CA 90224  
Phone: (310) 637-0349 Fax: (310) 637-6099

Specializing in  
MIL-A-8625 Type II and MIL-DTL-5541  
ISO 9001:2008 CERTIFIED

## Certification/Packing Slip

Date	Invoice #
4/18/2013	59929

Bill To
SIERRA PACIFIC SUPPLY INC. P.O. Box 4848 COMPTON, CA 90224

Ship To
SIERRA PACIFIC SUPPLY INC. 1801 W. EL SEGUNDO BLVD. COMPTON, CA 90222

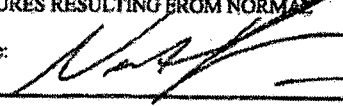
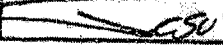
Ship	P.O. Number	Via	Terms	Due Date
4/18/2013	8678	OUR DEL.	NET 30	5/18/2013

Quantity	Units	Description	Misc.
3	LBS	Part: MS20426AD10-9A Lot: 4A26591 Containers: 1 Process: Anodized per MIL-A-8625F Type II Class 1, Clear	MIN LOT

ACCURATE ANODIZING CERTIFIES THAT THESE PARTS WERE PROCESSED IN ACCORDANCE WITH THE PROCESSES OR SPECIFICATIONS LISTED ABOVE. FINISH REQUIREMENTS, THAT ARE NOT REQUIRED TO BE TESTED DIRECTLY, ARE CONTROLLED THROUGH STATISTICAL MEANS AND MONTHLY TESTING; ACCURATE ANODIZING ASSUMES NO RESPONSIBILITY FOR FAILURES RESULTING FROM NORMAL STATISTICAL VARIATION.

Approved by Quality Assurance:

Received By / Date:

**BUTLER, INC.**

1600 W. 166th STREET  
GARDENA, CA 90247

# Packing List

Customer No. C.O.R.E

Ship To: **CORE AVIATION SERVICES, INC.**  
16305 E. TWIN ACRES DR.  
GILBERT, AZ 85298

Bill To: **CORE AVIATION SERVICES, INC.**  
16305 E. TWIN ACRES DR.  
GILBERT, AZ 85298

Date		Ship Via		F.O.B.		Terms	
10/05/12		UPS COL		Origin			
Purchase Order Number			Order Date		Sales Person		Our Order Number
STK120718-3			07/31/12				15663
Quantity			U/M	Item Number	Description	Serial Number	
Req	Shipped	B.O.					
1000	500	500	each	AN4C52A	LOT 15663		

 **BUTLER INC.**

Thank You

1600 West 166th Street Gardena, CA 90247  
(310) 323-3114 FAX (310) 324-0914



PERRY JOHNSON  
REGISTRARS, INC.  
ISO 9001 REGISTERED

# BUTLER INC.

1600 W. 166th STREET  
GARDENA, CALIFORNIA 90247  
(310) 323-3114 / FAX (310) 324-0914



PERRY JOHNSON  
REGISTRARS, INC.  
ISO 9001 REGISTERED

CAGE # 59053

C.O.R.E. AVIATION SERVICES  
16305 E. TWIN ACRES DRIVE  
GILBERT, AZ 85298

## CERTIFICATE OF COMPLIANCE

BUYER ORDER NO.: STK120718-3      ITEM: 1

NSN #: NA      PART NUMBER: AN4C52A      REV: 2

DESCRIPTION: BOLT, HEX HEAD, .2500-28 x 5.281, 431, PASSIVATE

SPECIFICATIONS: NASM6812-3, ASTM A 493-09, AMS-H-6875B, AMS2700E

QUANTITY: 500      LOT #: 15663      HEAT #: G18835

BUTLER INC. HEREBY CERTIFIES THAT THIS LOT HAS BEEN PRODUCED, SAMPLED, INSPECTED, TESTED, MARKED AND PACKAGED IN ACCORDANCE WITH ALL CONTRACT, DRAWING AND SPECIFICATION REQUIREMENTS. FURTHERMORE, BUTLER INC. CERTIFIES THAT DOCUMENTED EVIDENCE OF COMPLIANCE WITH ALL CONTRACT, DRAWING AND SPECIFICATION REQUIREMENTS APPLICABLE TO THIS LOT IS ON FILE AT OUR PLANT IN THE FORM OF MECHANICAL, METALLURGICAL AND/OR CHEMICAL TEST REPORTS AND INSPECTION RECORDS, AND IS AVAILABLE FOR BUYERS REVIEW.

DATE OF EXECUTION: 10/31/12

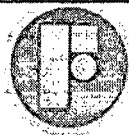
SIGNATURE: Tod F. Polidori

TOD F. POLIDORI

TITLE: Q.A. MANAGER

Form #BIC015  
Rev 11/97

Order No: 3449951  
Time 14:21:35



**FRY STEEL COMPANY**  
Registered ISO 9001  
13325 MOLETTE ST.  
SANTA FE SPRINGS, CA 90670  
(562) 802-2721

B04163  
Cust. NO.: 22899  
P.O. NO.:

## CERTIFICATE OF COMPLIANCE

BUTLER INC \*\*\*  
1600 W 166TH ST  
\*\* MAIL OUT INVOICES \*\*  
GARDENA CA 90247-4704

ROOKE MFG  
3360 W HARVARD ST  
SANTA ANA CA 92704-3920

08/02/12

QTY	--DESCRIPTION--	--ITEM CODE--	--HEAT NUMBER--
	CD 431 ANN AMS 5628 GREEN/YELLOW		
106	BARS .265"RD 12'RL	4210	G18835

REVIEWED BY: 

DATE: 9-14-12

### NOTICE

A COPY OF THE ORIGINAL MILL CERTIFICATION IS ATTACHED\*

CHEMICALS & PHYSICALS ARE REPORTED THAT WILL MEET THE SPECIFICATIONS SHOWN ON THE CERTIFICATE.  
EXCEPTIONS TO SPECIFICATIONS SHOULD BE SHOWN ON THE CERTIFICATION.

AUTOMATIC EXCEPTIONS TO THE SPECS LISTED ARE: LINE MARKING AND INSPECTION(I.E. MAG., SONIC,ETC.)

WE SUGGEST CONSULTING AN EXPERT ABOUT RELATED INSPECTION, PRIOR TO ALTERING THE MATERIAL FROM THE AS SHIPPED/RECEIVED  
CONDITION. "DEFECT FREE" MATERIAL CAN NOT BE GUARANTEED WITHOUT PRIOR INSPECTION APPROPRIATE TO APPLICATION.

NO WELD REPAIR HAS BEEN PERFORMED AND THIS MATERIAL IS FREE FROM MERCURY AND RADIUM  
CONTAMINATION AT TIME OF SHIPMENT

The willful recording of false, fictitious or fraudulent statements on this document may result as a felony under federal statutes.  
\*WHEN APPLICABLE

RAW MAT'L USED  
FOR LOT # 15663

  
CHIP SANDOVAL - Q.C. MANAGER



# Dunkirk Specialty Steel, LLC

A Universal Stainless Company

P.O. Box 319  
830 Brigham Rd.  
Dunkirk, NY 14048

Quality System Registered to  
ISO9001 and AS9100

## Material Certification

MILL ORDER: 0042387  
PART NUMBER: S#4210  
P.O. NUMBER: 46809-25

P.O. DATE: 11/22/2011

PAGE NUMBER: 1 of 1

PRINTED: 5/14/12 09:34

S FRY STEEL COMPANY  
O T P.O. BOX 4048  
L O  
D

SANTA FE SPRINGS, CA 90670

S FRY STEEL CO  
H T C/O C.M.I. FREIGHT TRANS  
I O 4201 WEST 36TH ST  
P

CHICAGO, IL 60623

Material Description: STAINLESS STEEL ROUND BAR 431 EAF+AOD ANNEALED CENTERLESS GROUND AMS 2303F, ASTM A484-10, MIL-S-18732B, AMS-S-18732B, AMS 5628F, McDonnell Douglas DMS-1565G (except sonic), Hi Shear #115J (Type II, chemistry only), Federal QQ-S-763C Am. 2 (431 cond. A, exc. hard. & impact), waive CLM, ASTM A276-10 (431),

Size .2650 DIAM X 132.0000 MIN/ 156.0000 MAX RANDOM LENGTH

Heat Number:	C	0.15	MN	0.60	SI	0.35	S	0.004	P	0.020
G18835 FNL Wt	CR	16.12	W	<0.05	V	0.03	NI	2.19	MO	0.06
	CO	<0.05	CU	0.15	SN	0.010	PB		CB	0.02
	TA		AL	<0.01	TI	<0.01	FE		B	
	O		MG		CA		SE		ZR	
	AG		BI		N	0.048	H		CQ	

HARDNESS (AS SHIPPED): 258 BHN

TENSILE CAPABILITY: 1875F/1HR/OQ+1175F/3HR/AC

T/S KSI	Y/S KSI	SEL
152.4	114.7	18.9

TENSILE CAPABILITY: 1875F/1HR/OQ + -100F/2HR/AC+550F/2HR/AC + 550F/2HR/AC

T/S KSI	Y/S KSI	SEL	AR/A
214.9	158.4	16.0	59.0

HARDENABILITY: Rc 49.0

MICRO TEST: ACCEPTABLE

MACRO ETCH TEST: ACCEPTABLE

GRAIN SIZE: 8

FERRITE: <4%

MAGNETIC PARTICLE F/S = 0/0

KNOWINGLY RECORDING FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.

S# 4210

MELT SOURCE: UNIVERSAL/DUNKIRK


CHEMICAL BALANCE IS Fe

MATERIAL MELTED IN THE USA BY UNIVERSAL STAINLESS & ALLOY PRODUCTS, BRIDGEVILLE, PA

MATERIAL MANUFACTURED IN THE USA

FRY STEEL CO. CERTIFIES THAT THIS IS  
A TRUE COPY OF THE ORIGINAL MILL TEST  
REPORT NOW ON FILE  
RECEIVED AND INSPECTED

MAY 15 2012

BY   
CHIP RANDALL QD MANAGER

/S/John M. Berry

/S/John M. Berry

05/14/12

Prepared by: John M. Berry, QA

John M. Berry, QA Technician

Date

Melted and manufactured in compliance with DFARS 252.225-7014 ALT 1, Melted by U.S. in Bridgeville, PA., USA. Certification IAW DIN 50 049 / EN 10204 3.1. Material complies with EU directive 2002/95/EC (RoHS). The test results shown are certified to be a correct statement of records that were derived from testing samples of the material. Results meet applicable specifications. No welding was performed on the material supplied on this order. Material is free from mercury contamination. Material is of NAFTA origin. This material was produced under the Dunkirk Specialty Steel Quality Management System documented in QP Manual, Rev. 6 dated 1/6/2012, conforming to NCA-3800. Material testing was performed as applicable in accordance with ASTM A370, A604, E8, E10, E18, F23, E45, E112, E139, E381, E572, E1019, STP-CHEM-GDS, E1444, & AMS 2315. The recording of false, fictitious, or fraudulent statements on this document may be punished as a felony under federal



10843 S. NORWALK BL.  
SANTA FE SPRINGS  
CALIFORNIA 90670  
562-944-8808  
800-622-6624  
FAX 562-944-1499  
www.continentalht.com

# CERTIFICATION

CERTIFICATION NUMBER  
616329

## CONTINENTAL

HEAT TREATING, INC.

BUTLER INC

1600 W 166TH STREET  
GARDENA, CA 90247-4704

BUTLER INC

1600 W 166TH STREET  
GARDENA, CA 90247-4704

S  
H  
I  
P  
T  
O

CUSTOMER NUMBER  
0047500

DATE RECEIVED  
09/24/12

CUSTOMER P.O. NUMBER  
23915

CUSTOMER SHIPPER

QUANTITY  
1255

WEIGHT  
110

PART NUMBER / DESCRIPTION

AN4C52A REV.2 LOT# 15663 2 PANS  
HEAT# G18835  
END USER: C.O.R.E.  
N/T, 125-145 KSI PER P.O.

MATERIAL  
431 S/S

HARDNESS  
26-32 HRC

MAX-CROSS SECTION  
.265

CASE DEPTH

CORE HARDNESS

SPECIFICATIONS

AMS 2759/5 D AMS-H-6875 B

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	Q-MED & TEMP	DATE
RACK VERT			RACK		2:00	Y				10/02
PRECLEAN	140	:05	WASH	140	14:10	14:10	14:15	AIR	A/C	10/02
LOADCOUPLE			WIRE		.08	Y				10/03
SET V P			ATMOS		.02	Y				10/05
AUSTENITIE	1875	1:30	V1	1875	18:04	23:12	00:42	VAC	OIL	10/05
SUBZERO	-100	2:20	CB3	-100	03:16	03:30	05:50	NIT	A/W	10/06
SNAPTEMPER	400	2:00	D13	400	10:26	11:30	13:30	AIR	A/C	10/06
TEMPER 15	1125	4:00	D12	1125	18:06	19:05	23:05	AIR	A/C	10/08
TEST RESULTS: 30 HRC			LAB#:365/08986 TEST:1 ACCT:1255 REJT:0							
TEMPER 15	1125	4:00	D12	1125	18:00	19:35	23:35	AIR	A/C	10/09
GLASS BEAD			B2		2:00	Y				10/11

REVIEWED BY:

JB  
A 5

DATE: 10-16-12

HARDNESS:29-32 HRC QTY TESTED:15 QTY ACCT:1255 QTY REJT:0

INSPECTOR  
WALTER WILLIAMS JR.

DATE  
10/12/12

QUALITY MANAGER  
JIMMY MARTINEZ for DON LUWMAN

This Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are implied, as a result of the thermal processing and/or hardness testing on this Process Certification. Material processed in a mercury-, radium- and asbestos-free environment. Unless otherwise specified above, for all AMS material specifications, no qualification or periodic testing has been performed. ALL FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATEST REVISION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.



Element Materials Technology  
15062 Bolsa Chica  
Huntington Beach, CA  
92649-1023 USA

P 714 892 1961  
F 714 892 8159  
T 888 786 7555  
info.hb@element.com  
element.com

Contact: Tod Polidori  
Butler, Inc.  
1600 West 166th Street  
GARDENA, CA 90247

### TEST CERTIFICATE — EAR-CONTROLLED DATA

Date: 10/26/2012  
Purchase Order Number: 24026  
Work Order Number: BUT004-10-24-00126-1

Part No.:	AN4C52A REV. 2
Lot No.:	15663
Heat No.:	G18835
Material:	431
Specification:	NASM 6812-3

### FASTENER EVALUATION — STAINLESS STEEL

Number of Pieces: 5  
Etchant:  
Micro: Vilella's  
Temperature: Ambient  
Magnification: 100X/200X  
Macro: Vilella's  
Temperature: Ambient  
Magnification: 20X  
Grain Flow:  
Head: Grain flow follows the contour of the head. (Acceptable)  
Head to Shank Fillet: Grain flow follows the contour of the head to shank fillet. (Acceptable)  
Threads: Grain flow follows the contour of the threads. (Acceptable)  
Cracks: The entire sample shows no evidence of cracks.  
Discontinuities / Defects:  
Head: No discontinuities / defects found.  
Threads:  
Crest Laps: 0.002" (Within limits)  
Flank Laps: No discontinuities / defects found.  
Root Laps: No discontinuities / defects found.  
Grain Growth: None  
Grain Size: ASTM 7.0  
Surface Condition on Head: No surface contamination (IGA) found.  
Surface Condition on Threads: No surface contamination (IGA) found.  
Microstructure: Exhibits fine tempered martensite with no visible carbide precipitation in the grain boundaries.  
Surface Hardening: None except as created in cold working rolling of threads.

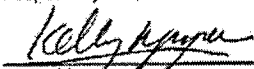
### MATERIAL CONFORMS TO SPECIFICATION

This document contains technical data whose export and re-export/ retransfer is subject to control by the U.S. Department of Commerce under the Export Administration Act and the Export Administration Regulations. The Department of Commerce's prior written approval may be required for the export or re-export/retransfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

REVIEWED BY: 

DATE: 10-26-12

Respectfully submitted

  
Kelly Nguyen

Senior Quality Administrator

15062 Bolsa Chica, Huntington Beach, CA 92649  
(714) 892-1961 ph • (714) 892-8159 fax www.element.com

The information contained in this certification represents only the material submitted and is certified only for the quantities tested. Reproduction except in full is reserved pending written approval. The recording of false, fictitious, or fraudulent statements or entries on the certificate may be punishable as a felony under federal law. All testing was performed in a mercury free environment. **All testing performed in accordance with the latest edition of the applicable ASTM, or other Federal Test Method in effect at the time of test.**



HADDCO INCORPORATED

2420 Amsler Street, Torrance, CA 90505

Toll Free: (888) 339-8472 Phone: (310) 325-7620 Fax: (310) 325-9655

www.haddco.com Email: NDT@haddco.com

NO. 14197

Sold To:

BUTLER, INC  
1600 W. 166TH ST.  
GARDENA, CA 90249

P.O. Number:

24027

Job/Lot #:

15663

Completion Date:

10/25/12

## CERTIFICATION

QUANTITY	PART NUMBER	DESCRIPTION
32	AN4C52A REV. 2	MPI PER ASTM E1444M-11 NASM6812-3 MAT. 431 HEAT# G18835 NOT PLATED  NO REJECTS

REVIEWED BY:

JB  
A 5

DATE: 10-26-12

This is to certify that 100% of the parts under subject purchase order have been inspected by Magnetic Particle Inspection in accordance with all applicable and/or purchase order requirements.

Inspector:

  
TOMMIE LLANES LEVEL II

NOTE: Altering of this certification renders it void.

# Allblack Company, LLC

13090 Park St.  
Santa Fe Springs, CA 90670  
Phone: (562) 946-2955  
Fax: (562) 946-6665

## Certificate of Conformance

To: Butler Inc.

1600 West 166th Street  
Gardena, CA 90247  
United States

From: Allblack Company, LLC

13090 Park St.  
Santa Fe Springs, CA 90670

Packing List No: 324937

Shipping Date: 10/30/12

Today's Date: 10/30/12

PO Number: 24036

### MERCURY FREE PROCESS

#### Quantity

#### Shipped

#### Unit

#### Description

#### Job Number

1

LOT

PASSIVATE PER AMS2700E 1204PCS. OF P/N AN4C52A REV 2 LOT#15663  
HT#G18835 MATL:431, 2PNS. 91#

439380

GENTLEMEN: This is to certify that the following articles have been processed and/or inspected as indicated above in accordance with military standards and specifications. If testing is not noted then no testing was performed. If a specification is not called out on the purchase order, then the process was performed per best commercial practice.

REVIEWED BY:

DATE: 10/31/12



Inspector's Initials

Allblack Company, LLC



**PERRY JOHNSON  
REGISTRARS, INC.**  
ISO 9001 REGISTERED

# BUTLER INC.

1600 W. 166th STREET  
GARDENA, CALIFORNIA 90247  
(310) 323-3114 / FAX (310) 324-0914



**PERRY JOHNSON  
REGISTRARS, INC.**  
ISO 9001 REGISTERED

## CERTIFIED TEST REPORT

CAGE CODE: 59053

PART NO: AN4C52A REV: 2  
LOT NO: 15663  
HEAT NO: G18835  
MAT'L: 431

PROCUREMENT SPEC: NASM6812 REV: 3  
LOT SIZE: 1204  
TEST DATE: 10/31/12  
CERTIFICATION NO: 4602

Test type: **Rockwell hardness**  
Results:

Test value: N/A

Test method:

Butler procedure no:

1.	5.	9.	13.	17.	21.	25.	29.
2.	6.	10.	14.	18.	22.	26.	30.
3.	7.	11.	15.	19.	23.	27.	31.
4.	8.	12.	16.	20.	24.	28.	32.

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Test type: **Axial tensile**  
Results:

Test value: 4080 lbs min

Test method: NASM1312-8

Butler procedure no: BIQOP-5-8-4

1.	6258 lbs	5.	6460 lbs	9.	13.	17.	21.	25.	29.
2.	6348 lbs	6.		10.	14.	18.	22.	26.	30.
3.	6307 lbs	7.		11.	15.	19.	23.	27.	31.
4.	6215 lbs	8.		12.	16.	20.	24.	28.	32.

Technician: Flavio Ron

Stamp:

Test type: **Double shear**  
Results:

Test value: 7360 lbs min

Test method: NASM1312-13

Butler procedure no: BIQOP-5-8-5

1.	9064 lbs	5.	8932 lbs	9.	13.	17.	21.	25.	29.
2.	8963 lbs	6.		10.	14.	18.	22.	26.	30.
3.	8878 lbs	7.		11.	15.	19.	23.	27.	31.
4.	9015 lbs	8.		12.	16.	20.	24.	28.	32.

Technician: Flavio Ron

Stamp:

Test type: **Recess torque**  
Deformation allowable:  
Results:

Test value: N/A  
Installation:

Test method:  
Removal:

Butler procedure no:  
Sample size:

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Test type: **Magnetic permeability**  
Results:

Test value: N/A  
Sample size:

Test method:

Butler procedure no:

Technician: \_\_\_\_\_

Stamp: \_\_\_\_\_

Material, as tested, conforms to specification requirements. The information on this report represents only the material tested. This report shall not be reproduced except in full without the written approval of Butler Inc.